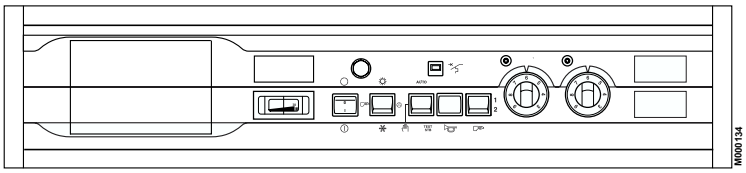
EN

Control panel

Package RC 6



Installation and Service Manual

300023031-001-A

remeha

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1 Introduction

1.1 Symbols and abbreviations

Caution danger
Risk of injury and damage to equipment. Attention must be paid to the warnings on safety of persons and equipment.

Specific information
Information must be kept in mind to maintain comfort.

Reference
Refer to another manual or other pages in this instruction manual.

DHW: Domestic hot water

1.2 General

The control panel is fitted on P 520, P 420 and P 320 boilers from Remeha.
This product will be marketed in the following European Union member states:
BE - GB - NL - HU
with a gas or oil-burner of the associated category.

1.2.1 Manufacturer's liability

Remeha manufactures products in compliance with the standard CE. Products are delivered with CE marking and all documents required.

In the interest of customers, **Remeha** are continuously endeavouring to make improvements in product quality. All the specifications stated in this document are therefore subject to change without notice.

The liability of **Remeha** as the manufacturer may not be invoked in the following cases:

- Incorrect use of the appliance,
- Faulty or insufficient maintenance of the appliance,
- Incorrect installation of the appliance.

1.2.2 Installer's liability

The installer is responsible for the installation and inital start up of the appliance. The installer must respect the following instructions:

- Read and follow the instructions given in the manuals provided with the appliance.
- Carry out installation in compliance with the prevailing legislation and standards.
- Perform the initial start up and carry out any checks necessary.
- Explain the installation to the user.
- Warn the user of the obligation to check the appliance and maintain it in good working order.
- Give all the instruction manuals to the user.

1.3 Directive 97/23/EC

Gas and oil boilers with a maximum operating temperature of 110°C and hot water tanks with a maximum operating pressure of 10 bar pertain to article 3.3 of the directive, and therefore, cannot be CE-marked to certify compliance with the directive 97/23 ECThe boilers and hot water tanks are designed and manufactured in accordance with the sound engineering practice, as requested in article 3.3 of the directive 97/23/EC; it is certified by compliance with the directives 90/396/EC, 92/42/EC, 2006/95/EC and 2004/108/EC.

1.4 Safety instructions and recommendations

The boiler shall be assembled and installed by a qualified professional only.

For a proper operating of the boiler, follow carefully the instructions.

2 Technical description

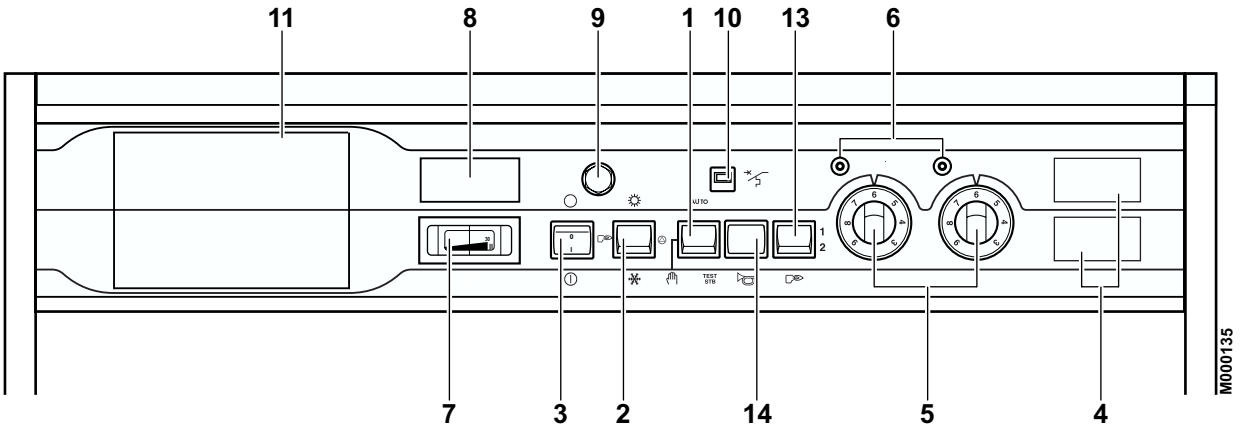
2.1 General description

The control panel is used to control boilers with 1 or 2-stage burners.

It may be fitted along with several optional features:

- Rematic control unit for 2-stage burners regulating the burner and 2 mixing valve, for heating only or for heating and domestic hot water.
- Hour run meter/s (Package BG 40)
- Flue gas thermometer (Package BP 28)

2.2 Control panel



1	**3**-position switch Auto / Manual / TEST STB - The switch may be left on either position manual or automatic **AUTO**. - **STB TEST:** Temporary action to test the safety thermostat. - Press the TEST STB switch and set pump shut-off switch (**2**) to the "Summer" position .
2	**Switch Burner / Heating pump:** This button is used to control the burner and the heating pump. Both buttons are in "Winter" position: Heating and hot water production systems operate (if a hot water tank is included). Both buttons are in "Summer" position: The burner and the heating pump don't operate. If the boiler is fitted with a control unit, both buttons must be left on the Winter position.
3	**Main ON/OFF switch**
4	**Location for hour run meter for the first and second stage (optional)**
5	**Boiler thermostat** (30 to 90 °C): A factory-set stop limits the maximum temperature to 75 °C. The stop may be moved if necessary.
6	**Stage one or stage two indicators:** These only go on if the relevant thermostat or control unit require heating and if the safety contact is closed.
7	**Boiler thermometer**
8	**Location for flue gas thermometer (optional)**
9	**Safety thermostat with manual reset** (set to 110 °C).
10	**10 A** Circuit-breaker: with delayed action and manual reset.
11	Location for optional features or a **Rematic** control unit
13	**Switch for selecting the number of burner stages**
14	**Burner alarm indicator**

2.3 Operating principle

2.3.1 Boiler regulation

The boiler may be regulated:

- either by the boiler thermostats,
- or by the Rematic control unit, if any (optional terminal strip present in control panel),
- or by the Rematic control unit of the cascaded installation.
- or by a third party control unit with volt-free contacts for high-low and on-off operation, if any (connection kit necessary).

If the boiler is fitted with a **Rematic** control unit, the boiler temperature is modulated by the regulator, which controls the burner and the motorised mixing valves depending upon the outside temperature. With a third party control connected, the boiler thermostats are set to the maximum position. Operating security is provided by the safety thermostat with manual reset.

3 Electrical connections

As the electrical wiring has been carefuly checked in the factory, the internal connections on the control panel must not be changed in any way.

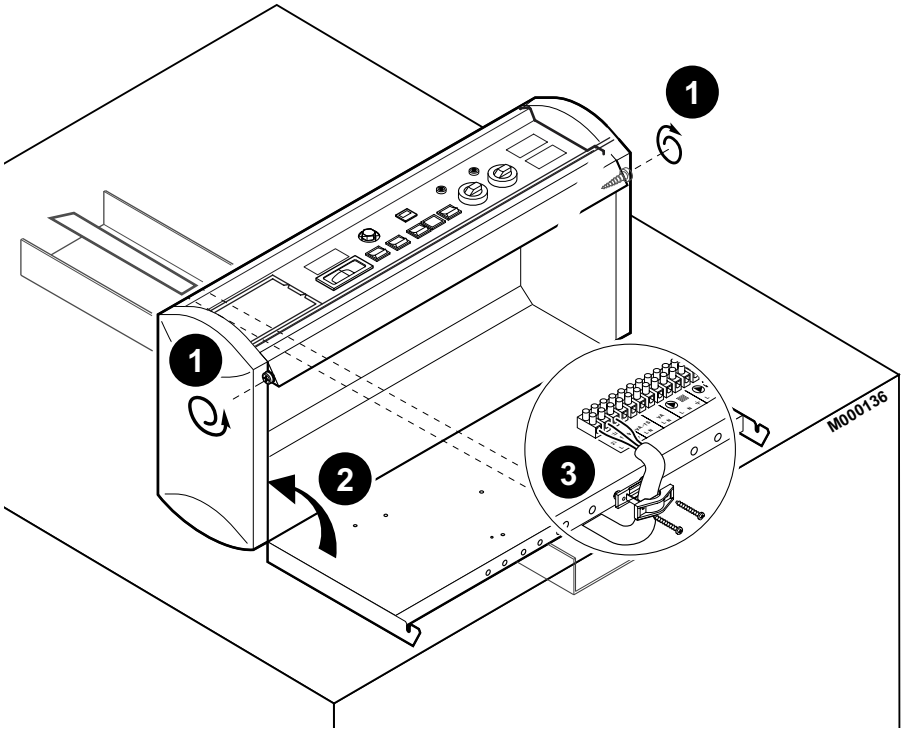
Electrical connections must match the electrical diagrams delivered with the equipment and comply with the instructions in the manual.

The electrical connections shall comply with standards in force. The equipment must have a power supply equipped with a omnipolar switch with an opening distance above 3 mm.

The earth connections shall comply with local standards.

3.1 Terminal block

All connections are made with the terminal boxxes designed for that purpose on the back of the bottom plate of the boiler's control panel.



Proceed as follows to open the control panel:

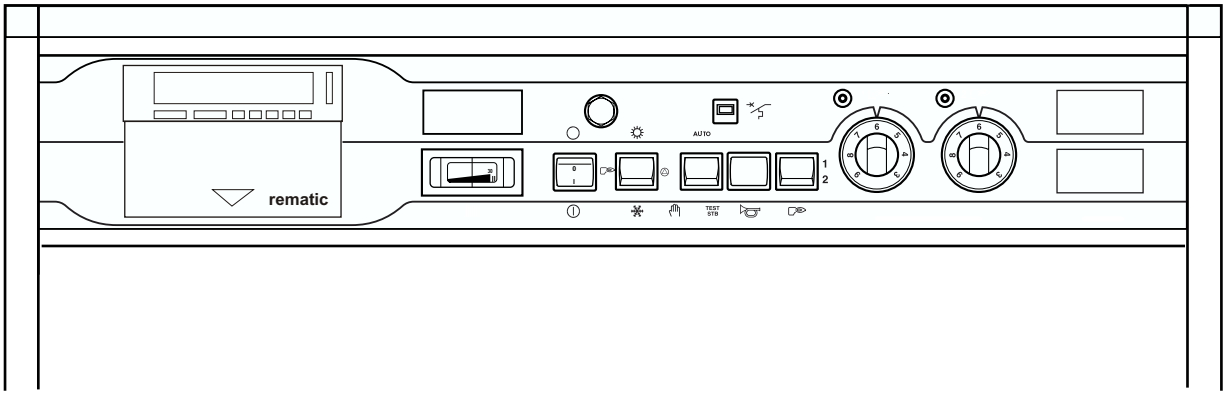
❶ Loosen the 2 screws located on either side of the front of the panel by two turns.

❷ Tilt back the control panel.

❸ Bring the connecting cables to the control panel through the openings located on the rear panel of the boiler and 1 or 2 cable channels, depending upon the type of boiler.

These cables will be fixed on to the control panel with cable clips (supplied in a separate bag).

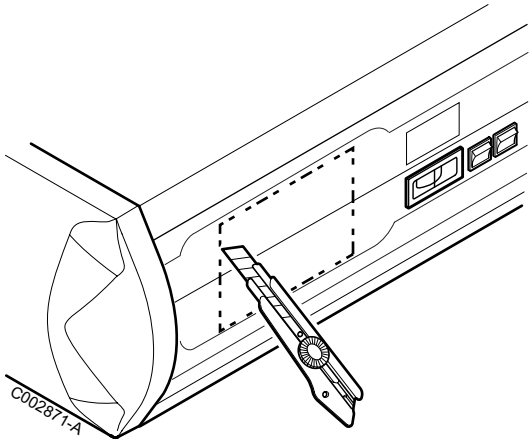
3.2 Installation with optional Rematic control unit



3.2.1 Fitting the Rematic control unit

The Rematic control unit is fitted on the left-hand side of the front of the panel.

❶



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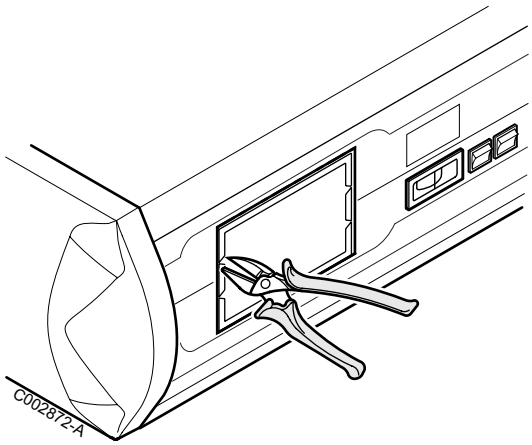
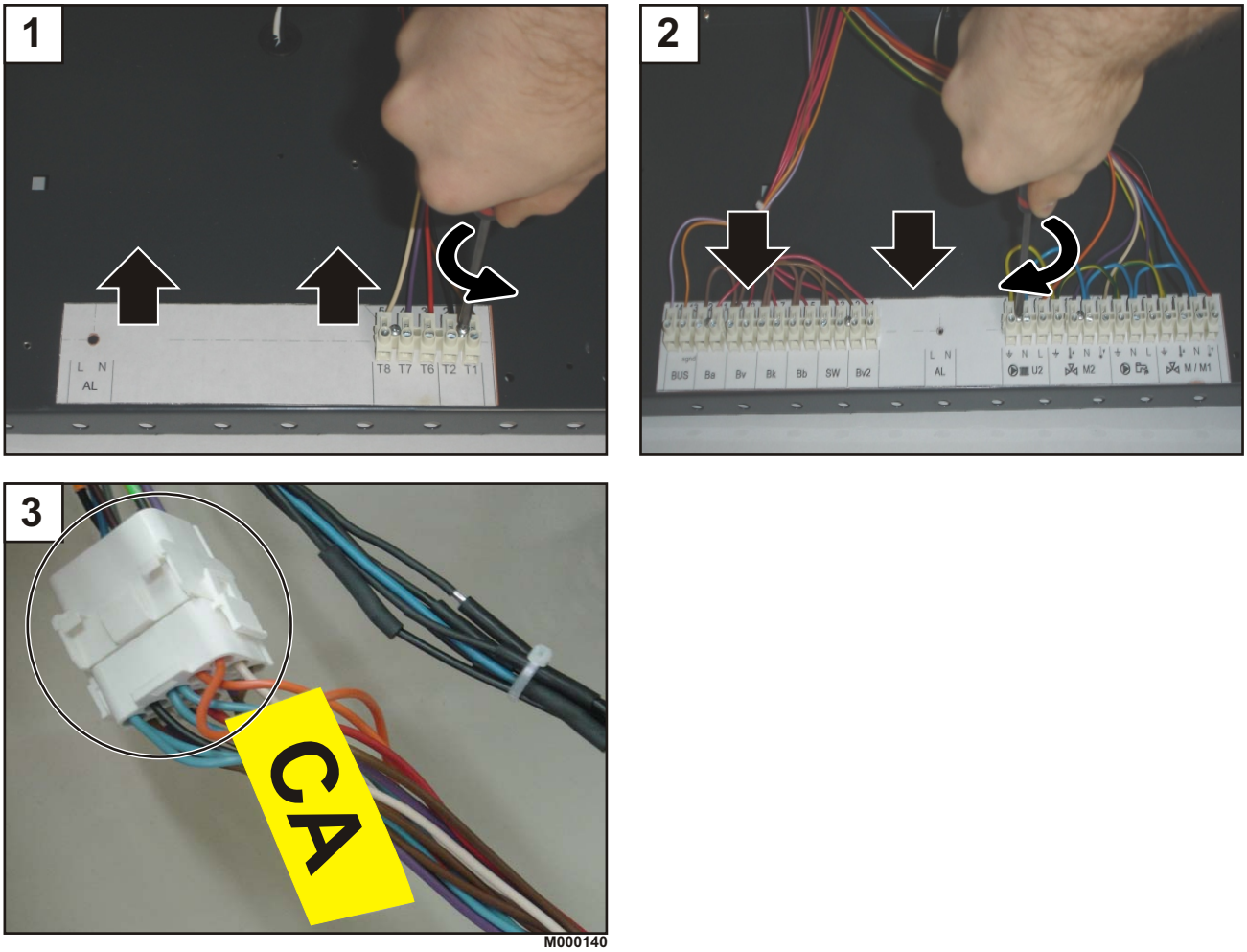
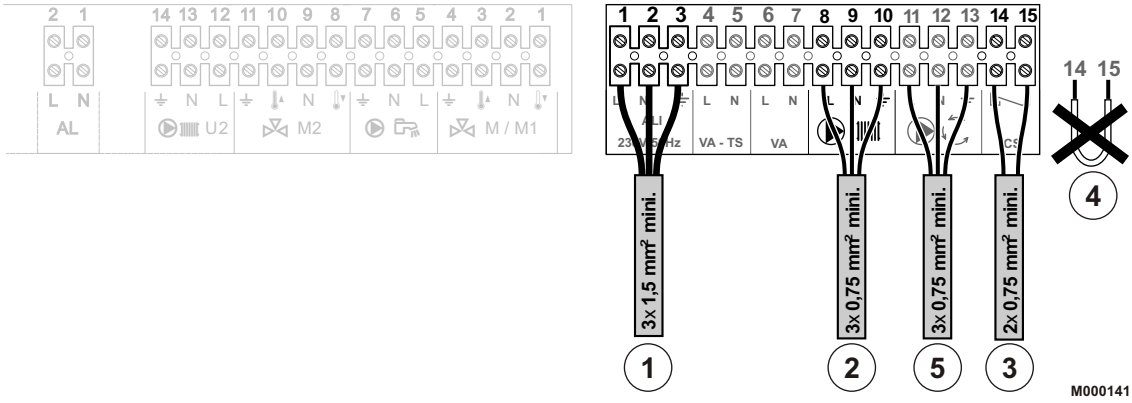


❸ Installing the supplementary wiring



3.2.2 Connections

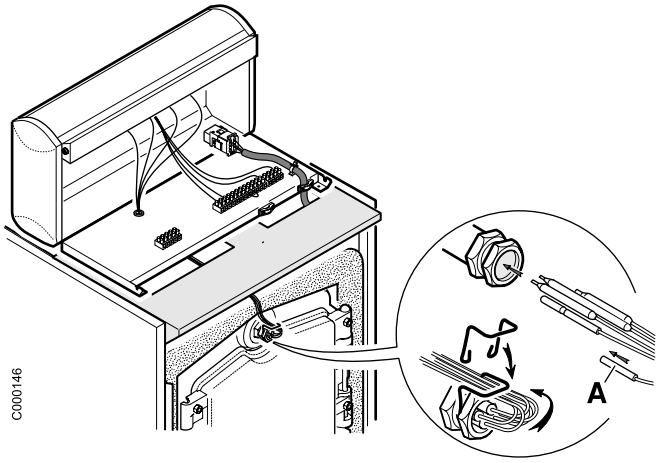
Make the electrical connections.



① 230 V main supply
② Pump heating circuit 1
③ Flow switch
④ Remove white wire bridge
⑤ Boiler pump

Connection block for Rematic sensors and controls.

See the instructions supplied with the control unit and any remote control unit used.



Separate the extra low voltage sensor wires from 230 V power wires in order to prevent electromagnetic interference.

Inside the boiler:

- Boilers with one cable channel: Place the 230 V main supply cables on one side of the cable channel and the sensor cables on the other. The cables shall be held in place on either side using plastic ties.
- Boilers with two cable channels: Place the 230 V main supply cables in one cable channel and the sensor cables in the other. The cables shall be held in place on either side using plastic ties.

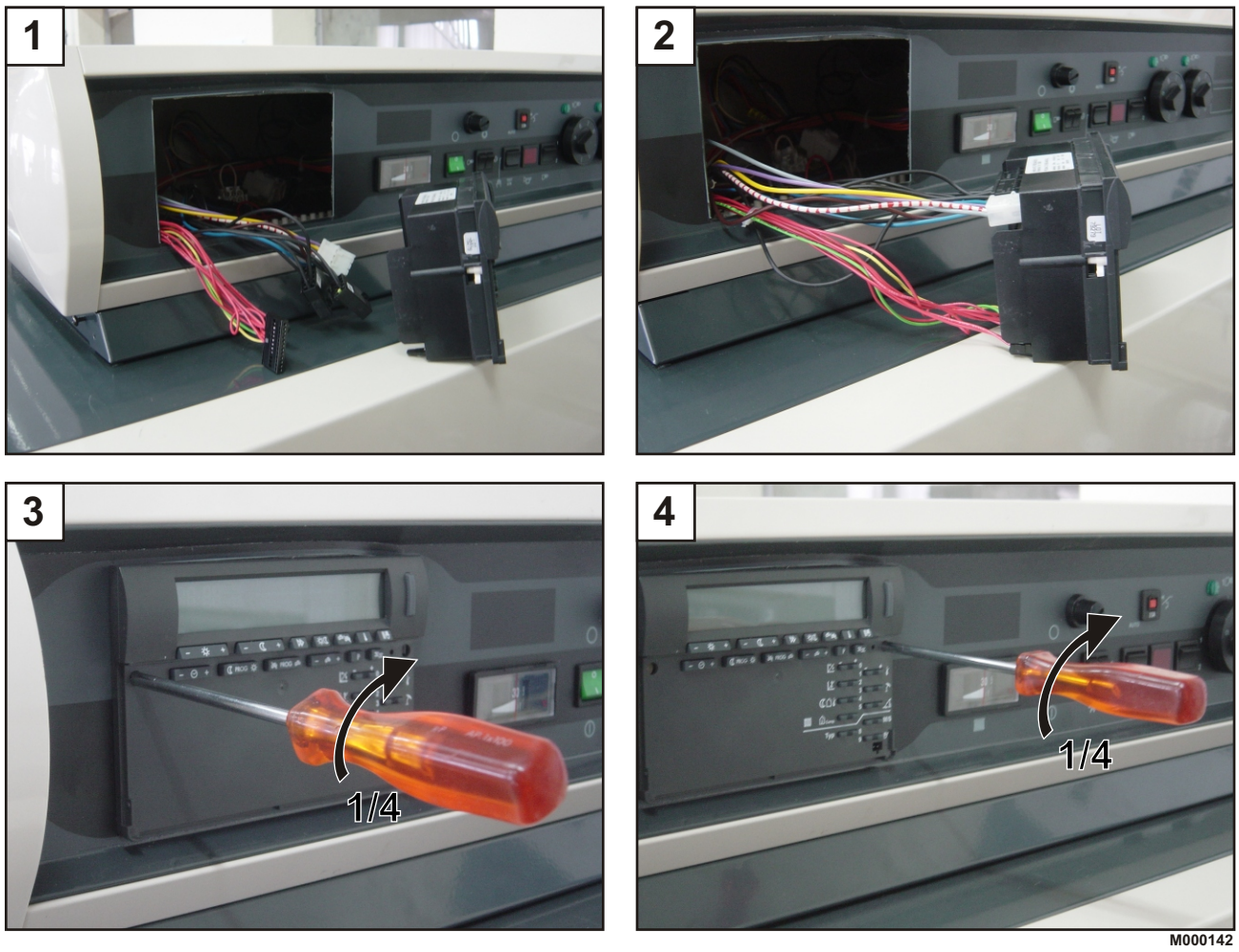
Outside the boiler:

Use 2 pipes or cable guides at least 10 cm apart.

Failure to comply with these instructions could lead to interference and control unit malfunctioning or even damage to the electronic circuitry.

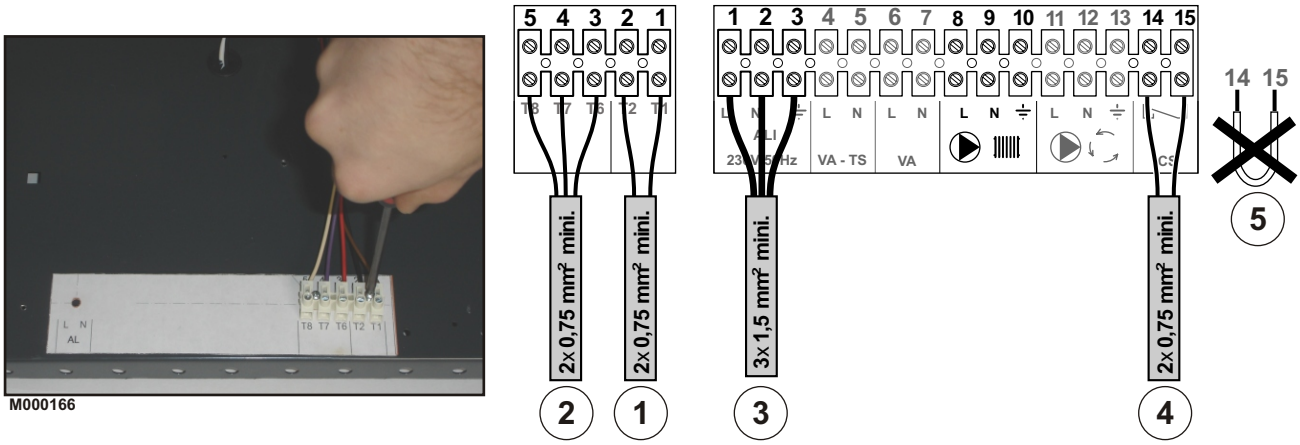
Installation of the sensors in the boiler sensor tube: Insert thermometer bulb **A** last.

3.2.3 Mouting of the control unit



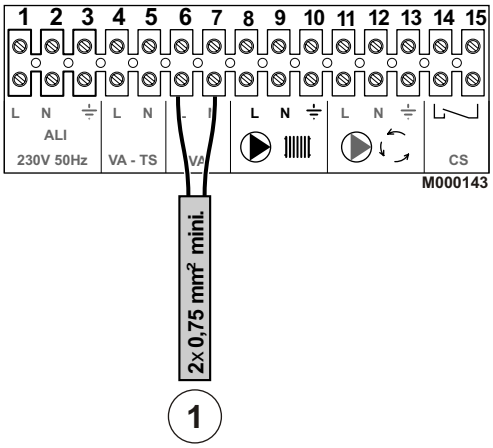
- Bring the blue connectors out through the opening in the control panel.
- Plug the connectors onto the back of the control unit.
- Push the control unit into the front of the control panel and fix it with the 2 plastic screws supplied (push and 1/4 turn, clockwise) on the front of the control unit.
- Close the control panel.

3.3 Connecting a third party control unit



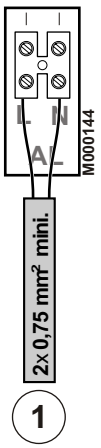
① Control of the first stage of the burner by volt-free contacts
② Control of the second stage of the burner by volt-free contacts - See description of the burner connectors here after.
③ Power supply 230 V
④ Flow switch
⑤ Remove white wire bridge

3.4 Connecting the burner alarm indicator



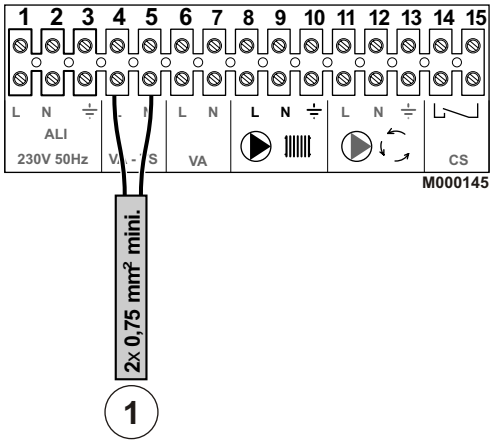
① Burner alarm indicator

3.5 Connecting the low-water pressure switch alarm indicator (Only NL)



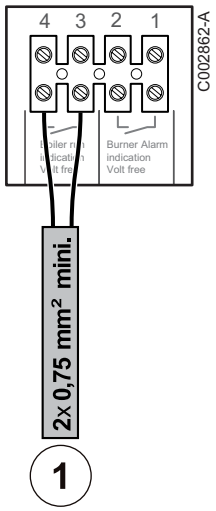
① Low-water pressure switch alarm indicator

3.6 Connecting the safety thermostat alarm indicator

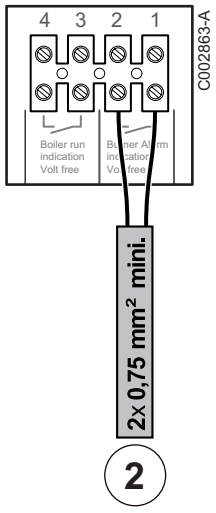


① Safety thermostat alarm indicator

3.7 Connecting the outlets "boiler run" and "burner alarm"

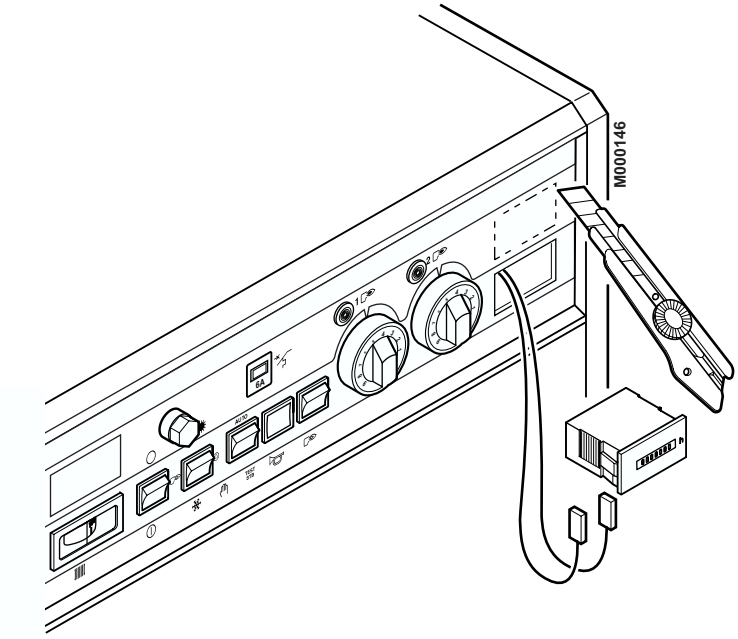


① Outlet boiler run (Volt free contact) ; Maximum admissible current: 16 A / 230 V.



② Outlet burner alarm (Volt free contact) ; Maximum admissible current: 16 A / 230 V.

3.8 Connecting one or two hour run meters (Package BG 40)

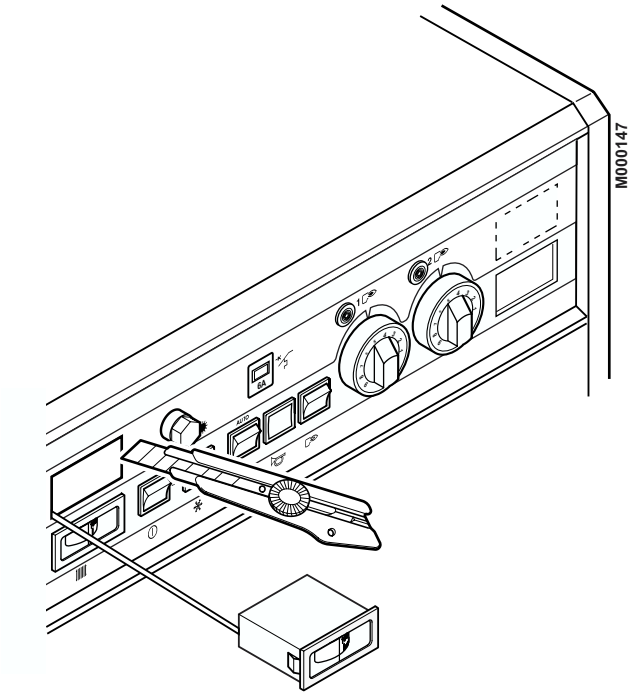


One or two optional hour run meters (stage 1 and 2) may be fitted on the front of the control panel.
To do so:

- Cut the cover off with a cutter along the edges of the coloured rectangle.
- Pull out the *1 wires standing by in the control panel.
- Connect the wires to the hour run meter (the wires are interchangeable):
  - Brown and blue wires for stage 1
  - Violet and blue wires for stage 2
- Clip the hour run meter into the control panel.

If the burner is a 1-stage burner, the counter displays the burner operating time.
If the burner has 2 stages, the first stage hour run meters displays the total burner operating time and the second hour run meter displays the operating time of stage 2.

3.9 Connecting the flue gas thermometer (Package BP 28)

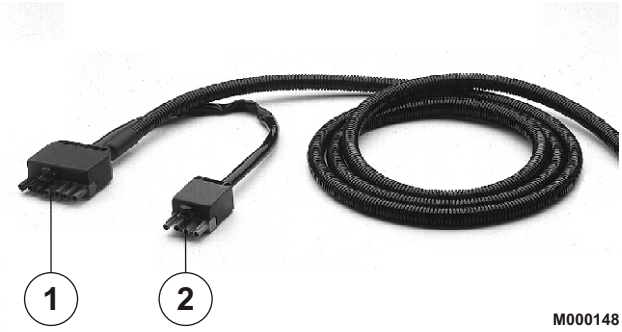


An optional flue gas thermometer may be fitted on the front of the control panel.

To do so:

- Cut the cover off with a cutter along the edges of the coloured rectangle.
- Clip the thermometer into the opening.
- Bring the sensor to the back of the boiler via the cable channel and insert it in the flue gas pipe.

3.10 Connecting the burner

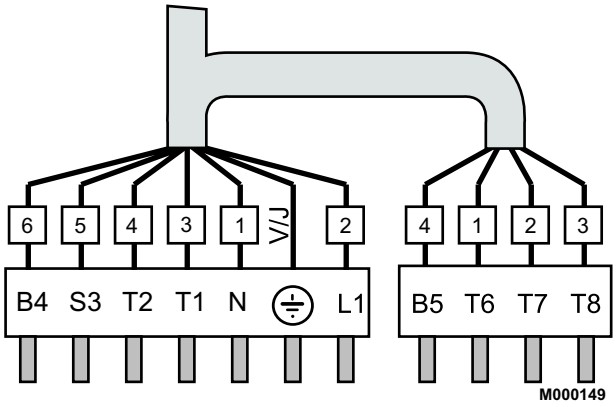


① 7-pin plug for 1-stage burners or stage 1 of 2-stage burners.

② 4-pin plug for stage 2 of the burner.

The control panel is supplied with the burner power cable. One end of the cable has two 7 and 4-pin European plugs which are connected to the burner connectors. The other end of the cable is connected to the control panel.

3.10.1 Burner without plug-in connectors



In this case, the connectors supplied with the burner cable must be rewired.

The diagram shows the wire numbers and the terminals of the burner connectors.

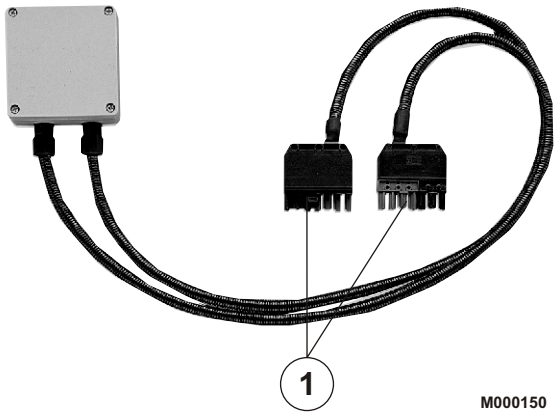
The table below specifies the way in which the cables are to be connected on the burner control box.

Connector terminal -No	Wire No	From	Connection to the burner control box
L1	**2**	Continuous phase from the safety thermostat	Burner main supply
*	**V/J**	Earth connection	Earth connection
N	**1**	Neutral taken after On/Off	Neutral terminal
T1/T2	**3/4**	Dry contact of the stage 1 boiler thermostat	Insert in the control circuit of boiler stage 1
S3	**5**	Burner alarm indicator	Alarm output (phase)
B4	**6**	Stage 1 On indicator (or hour run meter)	Stage 1 operation monotoring output (phase)
B5	**4**	Stage 2 On indicator (or hour run meter)	Stage 2 operation monotoring output (phase)
T6	**1**	Stage 2 boiler thermostat input	Insert in the control circuit of burner stage 2
T7	**2**	Stage 2 “boiler off” thermostat output	Connect only if the burner is of the modulating type
T8	**3**	Stage 2 “boiler on” thermostat output	Insert in the control circuit of burner stage 2

3.10.2 If the electrical characteristics of the burner exceed the following values:

- inrush current > 16 A or
- P > 450 W or
- I > 2 A cos φ = 0.7$

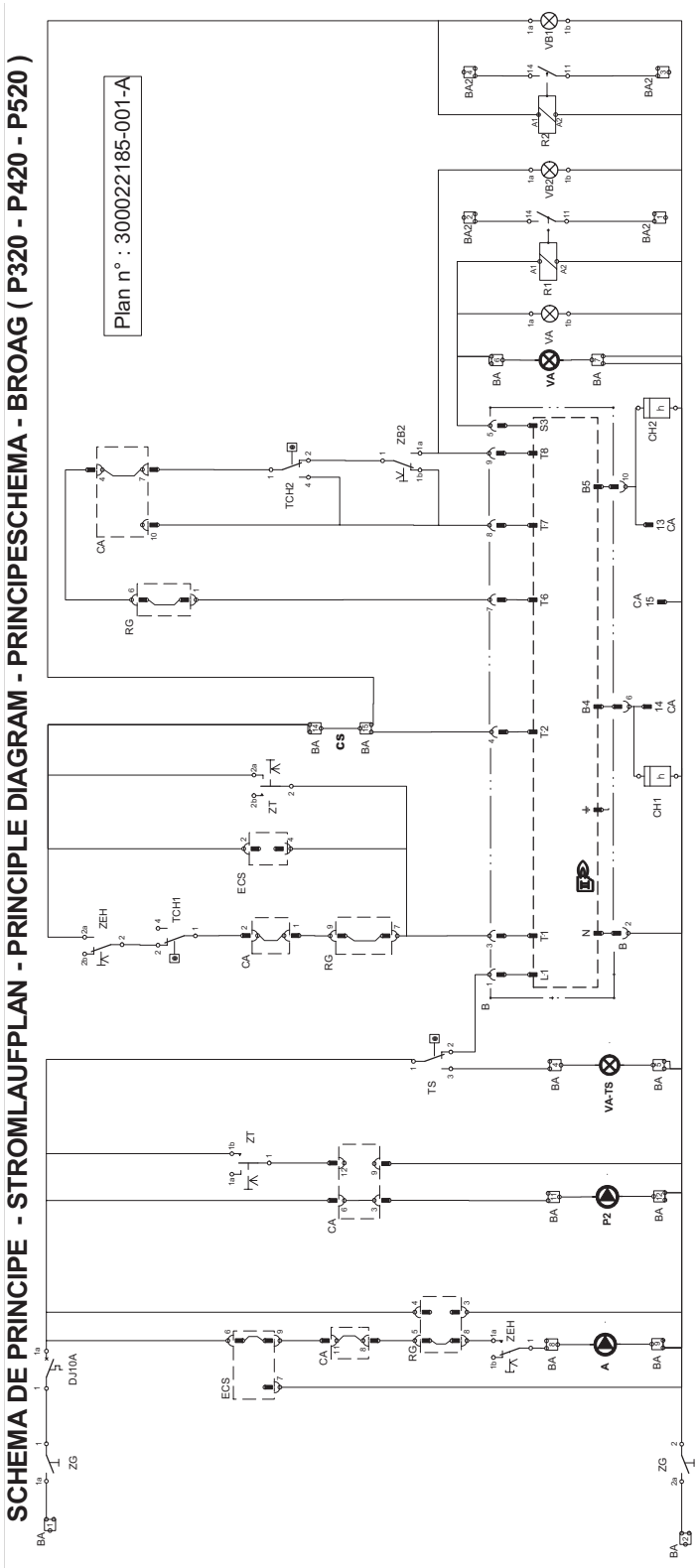
The burner controls must be relayed, e.g. with the relaying kit (package BP 51, optional).



① 7-pin plugs for connecting to the control panel and burner connectors.

4 Skeleton Diagrams

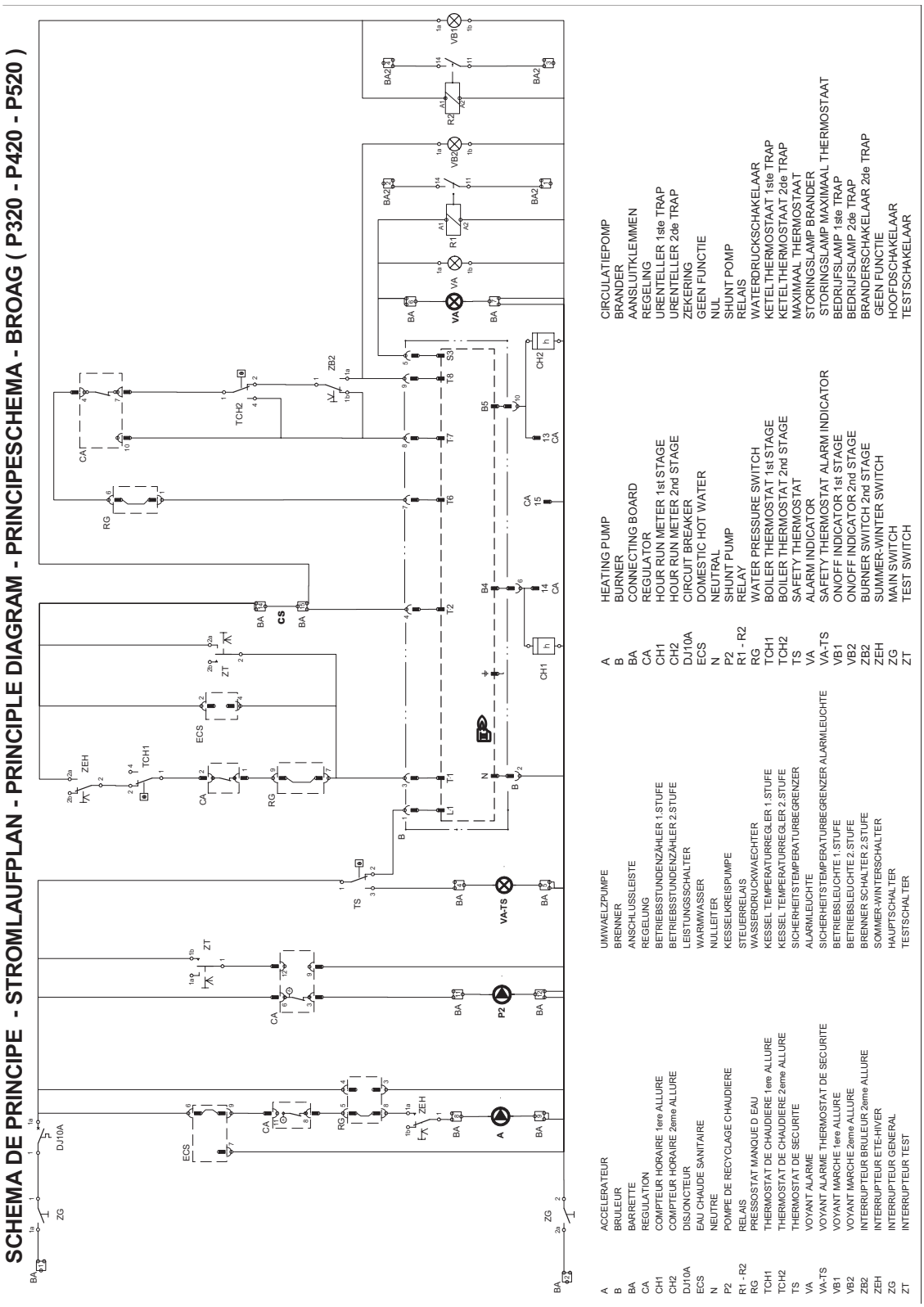
4.1 Principle diagram of the control panel



A	ACCELERATEUR	UMWAELZPUMPE	CIRCULATIEPOMP
B	BRULEUR	BRENNER	BRANDER
BA	BARRETTE	ANSCHLUSSLEISTE	AANSLUITKLEMMEN
CA	REGULATION	REGELUNG	REGELING
CH1	COMPTEUR HORAIRE 1ere ALLURE	BETRIEBSSTUNDENZÄHLER 1.STUFE	URENTELLER 1ste TRAP
CH2	COMPTEUR HORAIRE 2eme ALLURE	BETRIEBSSTUNDENZÄHLER 2.STUFE	URENTELLER 2de TRAP
DJ10A	DISJONCTEUR	LEISTUNGSSCHALTER	ZEKERING
ECS	EAU CHAUDE SANITAIRE	WARMWASSER	GEEN FUNCTIE
N	NEUTRE	NULLEITER	NUL
P2	POMPE DE RECYCLAGE CHAUDIERE	KESSELKREISPUMPE	SHUNT POMP
R1 - R2	RELAIS	STEUERRELAIS	RELAIS
RG	PRESSOSTAT MANQUE D EAU	WASSERDRUCKWAECHTER	WATERDRUCKSCHAKELAAR
TCH1	THERMOSTAT DE CHAUDIERE 1ere ALLURE	KESSEL TEMPERATURREGLER 1.STUFE	KETELTHERMOSTAAT 1ste TRAP
TCH2	THERMOSTAT DE CHAUDIERE 2eme ALLURE	KESSEL TEMPERATURREGLER 2.STUFE	KETELTHERMOSTAAT 2de TRAP
TS	THERMOSTAT DE SECURITE	SICHERHEITSTEMPERATURBEGRENZER	MAXIMAAL THERMOSTAAT
VA	VOYANT ALARME	ALARMLEUCHTE	STORINGSLAMP BRANDER
VA-TS	VOYANT ALARME THERMOSTAT DE SECURITE	SICHERHEITSTEMPERATURBEGRENZER ALARMLEUCHTE	STORINGSLAMP MAXIMAAL THERMOSTAAT
VB1	VOYANT MARCHE 1ere ALLURE	BETRIEBSLEUCHTE 1.STUFE	BEDRIJFSLAMP 1ste TRAP
VB2	VOYANT MARCHE 2eme ALLURE	BETRIEBSLEUCHTE 2.STUFE	BEDRIJFSLAMP 2de TRAP
ZB2	INTERRUPTEUR BRULEUR 2eme ALLURE	BRENNER SCHALTER 2.STUFE	BRANDERSCHAKELAAR 2de TRAP
ZEH	INTERRUPTEUR ETE-HIVER	SOMMER-WINTERSCHALTER	GEEN FUNCTIE
ZG	INTERRUPTEUR GENERAL	HAUPTSCHALTER	HOOFDSCHAKELAAR
ZT	INTERRUPTEUR TEST	TESTSCHALTER	TESTSCHAKELAAR

A	HEATING PUMP	CIRCULATIEPOMP	
B	BURNER	BRANDER	
BA	CONNECTING BOARD	AANSLUITKLEMMEN	
CA	REGULATOR	REGELING	
CH1	HOUR RUN METER 1st STAGE	URENTELLER 1ste TRAP	
CH2	HOUR RUN METER 2nd STAGE	URENTELLER 2de TRAP	
DJ10A	CIRCUIT BREAKER	ZEKERING	
ECS	DOMESTIC HOT WATER	GEEN FUNCTIE	
N	NEUTRAL	NUL	
P2	SHUNT PUMP	SHUNT POMP	
R1 - R2	RELAY	RELAIS	
RG	WATER PRESSURE SWITCH	WATERDRUCKSCHAKELAAR	
TCH1	BOILER THERMOSTAT 1st STAGE	KETELTHERMOSTAAT 1ste TRAP	
TCH2	BOILER THERMOSTAT 2nd STAGE	KETELTHERMOSTAAT 2de TRAP	
TS	SAFETY THERMOSTAT	MAXIMAAL THERMOSTAAT	
VA	ALARM INDICATOR	STORINGSLAMP BRANDER	
VA-TS	SAFETY THERMOSTAT ALARM INDICATOR	STORINGSLAMP MAXIMAAL THERMOSTAAT	
VB1	ON/OFF INDICATOR 1st STAGE	BEDRIJFSLAMP 1ste TRAP	
VB2	ON/OFF INDICATOR 2nd STAGE	BEDRIJFSLAMP 2de TRAP	
ZB2	BURNER SWITCH 2nd STAGE	BRANDERSCHAKELAAR 2de TRAP	
ZEH	SUMMER-WINTER SWITCH	GEEN FUNCTIE	
ZG	MAIN SWITCH	HOOFDSCHAKELAAR	
ZT	TEST SWITCH	TESTSCHAKELAAR	

4.2 Principle diagram of control panel with optional Rematic control unit

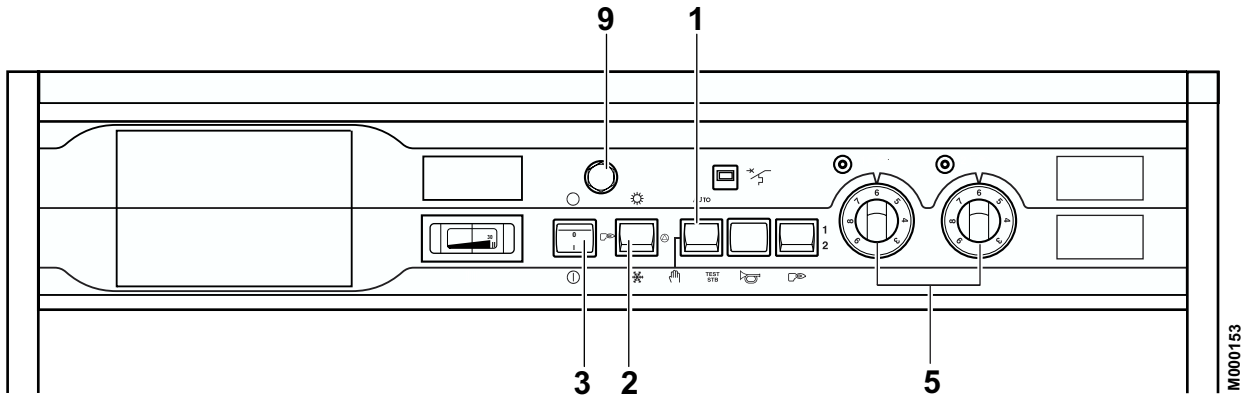


A	Boiler pump
B	Burner
BA	Terminal
CA	Connector for regulation
CH1	Stage 1 hour run meter
CH2	Stage 2 hour run meter
CS	Flow switch
Dj10A	10A Circuit-breaker
ECS	Connector without function
P2	Boiler shunt pump
PMA	low water pressure switch *(Only NL)
RG	Low-water pressure switch connector (only NL)

TCH1	Stage 1 boiler thermostat
TCH2	Stage 2 boiler thermostat
TS	Safety thermostat
VA	Burner alarm indicator
VA-TS	Safety thermostat alarm indicator
VB1	Stage 1 operating indicator
VB2	Stage 2 operating indicator
ZB2	Stage 2 burner switch
ZEH	Summer/Winter switch
ZG	General switch
ZT	Test Switch

5 Starting up and operation

5.1 Control panel without Rematic control unit



The first start-up is to be performed by your installation engineer.

Before starting the boiler, check if the installation **is filled with water**.

Start the boiler in the following order.

- **Boiler temperature regulation by means of the thermostats**

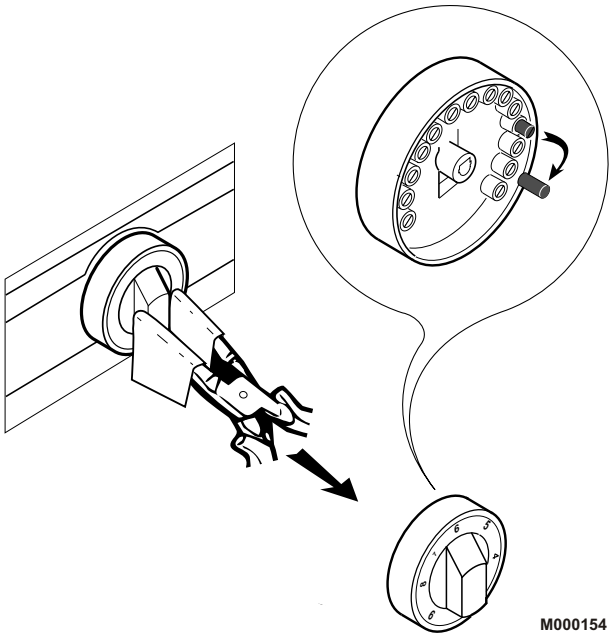
Place the boiler thermostat 5 in the required position. If the burner has 2 stages, the stage 2 thermostat must always be set to value which is approximately 5 °C less than that of the stage 1 thermostat.

If required, move the maximum temperature stop as instructed below.

If there is no control unit, we advise you never to set the boiler thermostat below mark 4 (approx. 40°C) in order to avoid the risk of combustion products condensing on the walls of the boiler.

- Set switch **1** to the **manual** position.
- **Control unit in boiler room electrical cabinet**
  See the instructions supplied with the control unit and any remote control unit used.
- Check that safety thermostat 9 is properly set. To do so, unscrew the hexagonal cap and press the reset button with a screwdriver.
- Set the burner and heating pump buttons **2** to the Winter position.
- Set main On/Off switch **3** to ⏻.

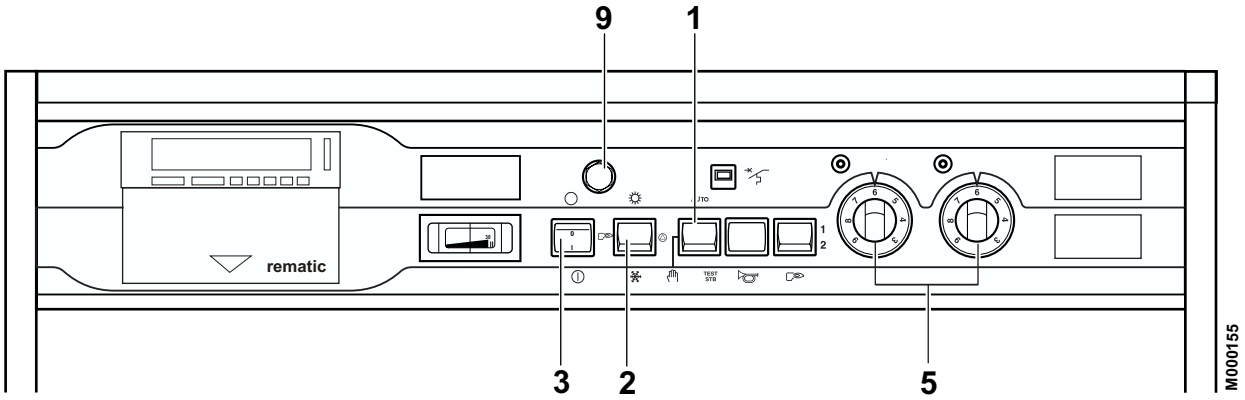
Moving the thermostat stop:



A factory-set stop limits the maximum temperature to 75 °C. To move the stop, proceed as follows:

- Pull the thermostat button out carefully (use pliers and a cloth).
- Remove the stop with the pliers.
- Put the stop in the hole of the desired higher temperature (maximum 90°C).

5.2 Control panel with optional Rematic control unit



The first start-up is to be performed by your installation engineer.

Before starting the boiler, check if the installation **is filled with water**.

Start the boiler in the following order:

- Set the boiler thermostats **5** on maximum position.
  If required, move the maximum temperature stop as instructed on the preceding page.

Set the Rematic control unit. To do so, operate according to the control instructions supplied with the unit.

- Set switch **1** to the **AUTO** position.
- Check that safety thermostat 9 is properly set. To do so, unscrew the hexagonal cap and press the reset button with a screwdriver.
- Set the burner and heating pump buttons **2** to the Winter ❄ position.
- Set main On/Off switch **3** to ⏻.

6 Spare parts

To order a spare part, quote the reference number next to the part required.

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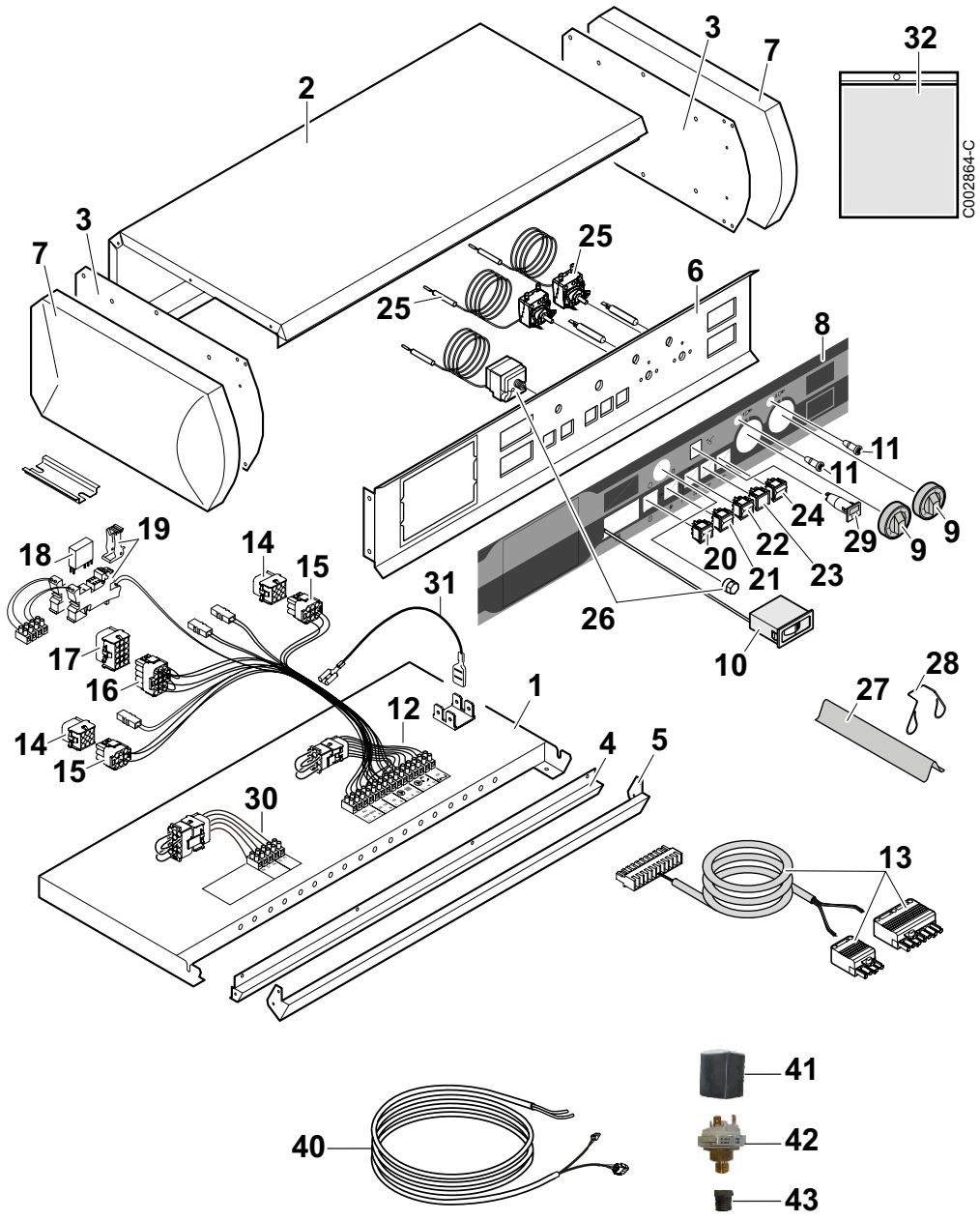
Control panel



Ref.	Code no.	Description
		Control panel
1	8555-0527	Painted control panel base
2	8555-0536	Painted control panel cover
3	8555-0537	Painted control panel side plate
4	8555-0538	Painted control panel trim
5	8553-0526	Painted spoiler SP panel
6	8555-0505	Painted control panel front with equipment
7	9750-9034	Side plate
8	9421-0705	Control panel front cover
9	8555-5501	Setting button + pins
10	9536-5157	Flat grand model thermometer
11	9521-6281	Round green indicator
12	200017277	cable form
13	8555-4906	Burner cable
14	9531-7687	9-pin female connector
15	9531-7689	9-pin plug
16	9531-8904	15-pin plug
17	9531-8906	15-pin female connector
18	300018892	Relay Finder
19	300020023	Clamp relay bracket
20	9532-5027	Green S/S bipolar switch
21	9532-5361	Bipolar switch
22	9532-5362	Test Switch
23	9521-6220	Red indicator
24	9532-5103	Inverter switch
25	9536-3348	30 to 90 °C setting thermostat
26	9536-3311	110 °C safety thermostat
27	9536-5613	Contact spring for pocket
28	9758-1286	Spring for pocket
29	9534-0286	10A Circuit-breaker
30	200017276	Harness for third party control unit
31	8555-4908	Earth liaison wire
32	8555-5500	Fasteners
		low water pressure switch (Only NL)
40	200003100	Electrical harness for pressure switch
41	9771-0243	Protection cap + 2 screws
42	9536-3048	low water pressure switch
43	9494-8080	Nipple N241 - 1/2"x1/4"

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Subject to alterations.

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